OP-047

Plasma miRNA (miR: microribonucleic acid) Levels in Patients with Decompensated Heart Failure: Can miRNA Be an Indicator of the Effectiveness of the Treatment?

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Aim: To compare the molecule levels of plasma miRNA (miR-22, miR-24, miR-92b, miR-320a and miR-423-5p) in acute decompensated heart failure (ADHF) patients before and after treatment with the controls who do not have HF.
Method: This study included 47 (mean age: 61.70±11.75, 63.8% men) patients hospitalized in intensive care unit with the diagnosis of ADHF and 30 (mean age: 57.13±8.32, 46.66% men) healthy population. Peripheric blood was withdrawn from the patients at admission and after treatment and the miR-22, miR-24, miR-92b, miR 320a and miR-423-5p levels were compared with the control group. Venous blood was withdrawn from patients two times, first at hospitalization and second after treatment before discharge and only once from the controls and were kept at -80 Celsius. After sample collection was concluded, the levels of miRNA detected from peripheral blood cells (leukocytes) were calculated using the method PCR, and comparison between groups and within the group of HF miRNA differences were expressed as fold change (2 to the power of -ΔΔ Ct value was used).
Results: The demographic features and the treatment being received at admission is listed in Table-1. All patients received parenteral furosemide and 8.5% of them had inotropic drugs at admission. The basal (decompansated) miR-22 levels were detected as 2.33 fold lower in the patient group than the control group. After medical treatment before discharge (compensated) the decrease was 1,23 folds, resulting in closer levels to the control group. Similar level difference was detected with the miRNA 24. The miR-92 levels were increased both at admission and at discharge compared with the controls. The amount of increase was 2.33 fold at admission and 3 folds at discharge. The differences of the levels of miR-423-5p and 320a were not significant (Table-2). The difference of the miRNA levels were similar between ischemic and non-ischemic heart failure groups.
Conclusion: 1) Acute decompansated heart failure patients have significantly decreased (>2-fold) miR-22 and 24 levels, after obtaining compensation with medical treatment, it gets closer to the normal population with treatment. 2) In this group of patients miRNA-22 and 24 levels can be a useful indicator (biomarker) for the effectiveness of drug therapy.

Table-1. General characteristics of HF and control groups

	HF group (n = 47)	Control group (n = 30)	p value
Age (mean)	61.70	57.13	0.025
Gender (m/f)	30 / 17	14 / 16	0.013
BMI	28.07	27.16	0.137
HT	21 (%44.7)	17 (56.7)	0.214
HLP	35 (%74.5)	18 (%60)	0.139
DM	29 (%61.7)	12 (%40)	0.534
Drugs	39 (%88.6)	4 (%13.3)	<0.001
BB	26 (%59.1)	8 (%26.7)	<0.001
ACEi	13 (%27.6)	0 (%0)	<0.001
MRA			

HF: heart failure, BMI: body mass index, HT: hypertension, HLP: hyperlipidemia, DM: diabetes mellitus BB: beta blocker, ACEi: angiotensin converting enzyme inhibitors, MRA: mineralokortikoid antogonists

Table-2. miRNA expression fold changes

	According to the normal at admission	According to the normal at discharge
miR- 22	- 2.39 f	- 1.23 f
miR- 24	- 2.07 f	- 1.59 f
miR- 92b	+ 2.33 f	+ 3.0 f
miR- 320a	- 1.56 f	- 1.46 f
miR- 423-5p	- 1.16 f	+ 1.3 f

miRNA (miR): mikroribonükleic acid

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Effects of Tirofiban Maintenance 24 or 48 Hours in Patients with Anterior Myocardial Infarction Undergoing Primary Percutaneous Coronary Intervention

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Background and Aim: Percutaneous coronary intervention (PCI) does not often have optimal results despite restoration of coronary blood flow at myocardial recovery because of impaired microvascular perfusion. Previous studies have focused on the starting time and dosage of tirofiban. This study aimed to investigate and evaluate with 99mTc-sestamibi scan whether the results of PCI can be changed by maintenance infusion of the tirofiban for 24 or 48 hours in patients presenting with anterior STEMI.
Methods: The study consisted of 84 patients with anterior STEMI who were candidates to undergo primary PCI and whose occlusion were in proximal or mid left anterior descending artery (LAD), were given 25μg/kg/3 minutes tirofiban and randomized maintenance infusion of 0.15μg/kg/minute for 24 or 48 hours. A resting 99mTc sestamibi scan was performed at post-procedure 5th day before discharge and the primary efficacy end point was a 5-point scoring system for perfusion defect severity. Major adverse cardiac events were defined as death from any cause, reinfarction, and clinically driven target-vessel revascularization within the first 6 months.
Results: The baseline characteristics were similar at 24 (n=42) and 48 hours (n=42) infusion groups. There was no significant difference at the anticipated symptom onset to presentation time (3.83±2.09 h at 24 hour infusion group and 4.10±2.01 h at 48 hour infusion group, p=0.380) and door to balloon time (45.71±15.91 min. at 24 hour infusion group and 48.95±20.78 min. at 48 hour infusion group, p=0.542) between two groups. Except for basal anteroseptal and basal anterior segments, significant differences were obtained from the reduction of 5-point scoring system for perfusion defect severity in segments and in the summed rest scores (apex 2.90±0.95, 2.04±1.43; p<0.05; mid-anterior 1.88±0.94, 1.28±1.13; p<0.05; mid-anteroseptal 2.28±0.83, 1.73±1.14; p<0.05; apical anterior 2.69±0.81, 2.00±1.43; p<0.05;, apical septal 2.64±0.87, 1.95±1.32; p<0.05;, apical lateral 2.50±0.94, 2.21±1.27; p<0.05, basal anterior 0.11±0.32, 0.33±0.75; p=0.09; basal anteroseptal 0.66±0.72, 0.50±0.91; p=0.288, SRS 15.61±4.60, 11.97±7.34; p<0.05). No significant effect was observed on major adverse cardiac events at 6 months. The safety profile did not differ between 24 and 48 hour infusion of tirofiban.
Conclusion: The use of tirofiban, when administered at a high dose of bolus and maintained for 48 hours, is safe and significantly reduces perfusion defect severity in patients with anterior STEMI presenting early after symptom onset and undergoing primary PCI.